LED Light Engine, 3.0" Round Module

Constant-Current DC Array, 6 LED Series x 4 Parallel Strings
Engineered by Norlux
24 Nichia LEDs
5 yr. Warranty

Specifications

|	
Driver Type:	**Constant-Current**
Drive Current:	350mA Nominal
Nom. Forward Voltage:	17.9V
Total Board Power:	6.3W Nominal
Life:	50,000 Hrs, 70% lumen maint. @ Ta max 40°C, used as specified
Max Junction Temp:	90°C
Max Test Point Temp:	80°C
Operating Temp:	-40°C to +60°C Ambient
Storage Temp:	-40°C to +80°C
Viewing Angle (FWHM):	120° Lambertian distribution
CRI:	83 typical

- Designed for easy use in standard luminaires
- Tight LED pitch eliminates pixelization, no complex lens or optics required
- Color: ¼ ANSI Binning, 3 Step MacAdam Ellipse
- Suggested Applications: Commercial or Residential Downlights
- Customizable: Engines can be modified to your application. Contact us.
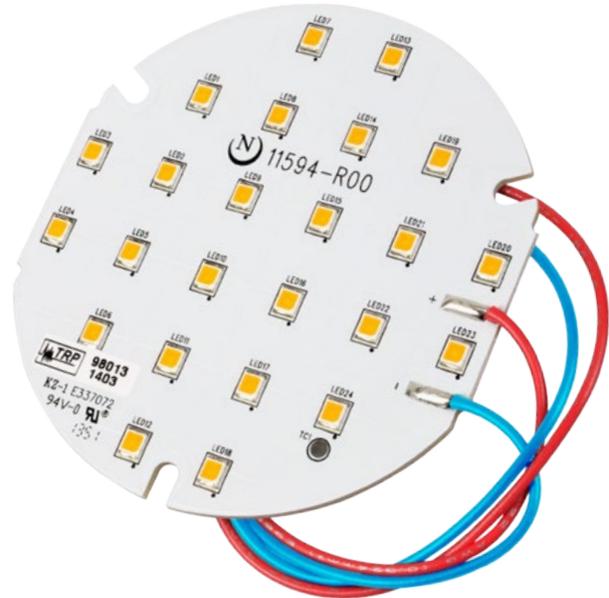
3.0 Inch Round DC LED Module @ 350mA

Model Number	Total Board Power (W)	Total Current (mA)	Color Temp (K)	Lumens (± 15%)	Board LPW
98013	6.3	350	2700	769	123
98014	6.3	350	3000	820	131
98015	6.3	350	3500	860	137
98016	6.3	350	4000	883	141
98031	6.3	350	5000	910	144

Dimensions:
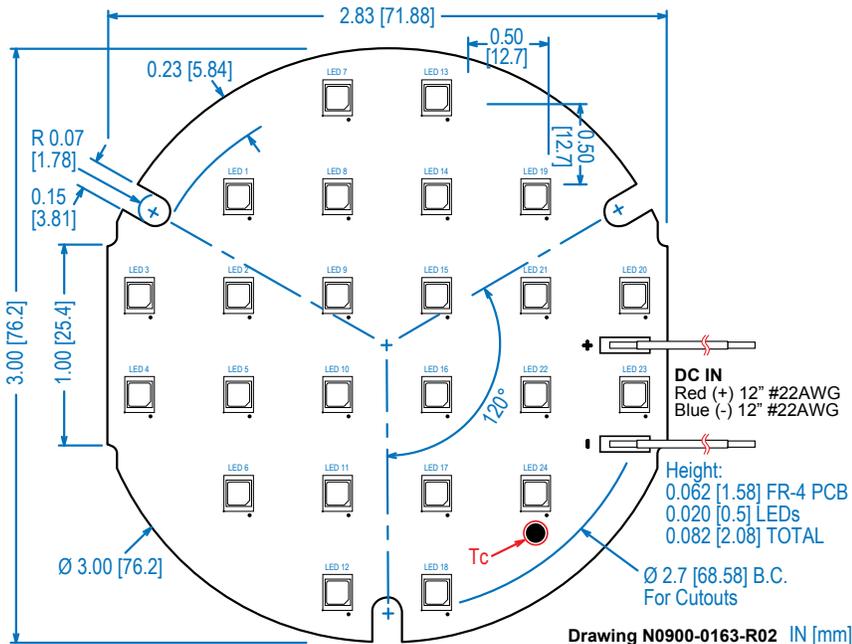
Connectivity Options

Suffix	Connection
(blank)	12 IN, #22 AWG Stranded Leads
-01	No Leads
-02	Push-in Connectors

For Poke-In Connectors, use #24-18 AWG stranded or solid wire

DC IN
Red (+) 12" #22AWG
Blue (-) 12" #22AWG

Height:
0.062 [1.58] FR-4 PCB
0.020 [0.5] LEDs
0.082 [2.08] TOTAL

Ø 2.7 [68.58] B.C. For Cutouts

Drawing N0900-0163-R02 IN [mm]

★**MADE IN USA**★
Of Imported And Domestic Components

Rev 5-14-15

CIE Chromaticity Coordinates:

2700K
3 Step Macadams Ellipse

X	Y
0.4576	0.4183
0.4698	0.4212
0.4478	0.3999
0.4591	0.4025

3000K
3 Step Macadams Ellipse

X	Y
0.4325	0.4101
0.4452	0.4146
0.4244	0.3923
0.4362	0.3965

3500K
3 Step Macadams Ellipse

X	Y
0.4045	0.3975
0.4189	0.4044
0.3989	0.3819
0.412	0.3875

4000K
3 Step Macadams Ellipse

X	Y
0.3783	0.3836
0.3909	0.3906
0.3746	0.3687
0.3864	0.3757

5000K
3 Step Macadams Ellipse

X	Y
0.3408	0.3461
0.3485	0.3520
0.3416	0.3585
0.3499	0.3644

Relative Luminous Flux / Tc Temperature

T_c (°C)   65mA/LED
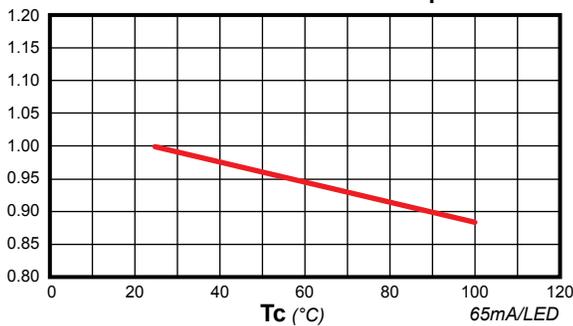
Compatible TRP Drivers:

The drivers listed here are all compatible with this module. Choose the best driver for your application.

• BLED12W-036-C0350
• LED12W-24-C0350

Step Dimming:

This Light Engine can be step-dimmed, with a recommended TRP dimmable driver and SD series step-dimming module. See the SD2 or SD3 data sheet for wiring information.

Series/Parallel Configurations

Parallel: The positive and negative of one board is connected to the respective positive and negative of the next. Current adds, so the supply must be 2x the current for 2 boards.

Series: The negative of one board is connected to the positive of the next. Voltage adds, so the supply must be 2x the voltage for 2 boards.

Parallel
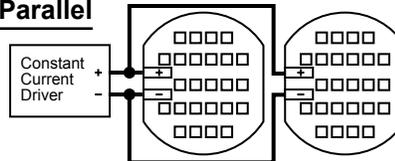
Series
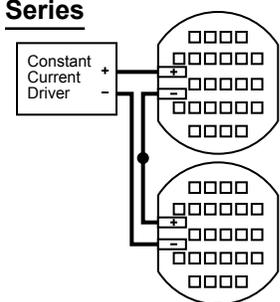
Maximum Run Lengths

The max number of boards wired in a chain **(series)** is limited by the max current rating of the first board wired to the driver. The sum of the board currents, in the chain, funnels through the first board. Multiple chains can connect directly to the power supply in parallel. See table for max chain length.

Product	Series/Parallel	Max Allowable Boards	
		High Current *(Nom)*	Low Current
3" Round	Series	10	N/A

Mounting Notes

The LED assembly is supplied with mounting holes, per the dimensional drawing. It is important to mount the board in such a way as to maintain the Tc point below the max. The steady state thermals in application will dictate if the board needs to be mounted directly to metallic housing and/or include a thermal pad. For example fully enclosed recessed fixture will require better thermal mounting than an open air pendant.

Thermal Application Notes

This board requires additional heat sinking to run above 45ºC ambient at nominal specifications. Heat sink is also required when operated above specified drive currents.

Maximum Current

Max Current: 720mA
Voltage at max current: 20V, Power at max current: 14.4W
The total maximum current reflects the LED maximum forward current only, without considering thermal needs. Driving the LEDs this hard will likely violate their thermal limits, depending on the application. **Tc point must remain at or below the max temperature, or the warranty will be voided.** Temperature is directly correlated to LED current.

Static Sensitive Device

Handle only at static-safe work stations.

Packaging

50 per box standard.